

Range Commanders Council Range Safety Group Meeting Recap

Founded in 1951, the Range Commanders Council is dedicated to serving the technical and operational needs of the United States test, training, and operational ranges. The council was organized to preserve and enhance the efficiency and effectiveness of member ranges, thereby increasing their research and development, operational test and evaluation, and training and readiness capabilities.

The Range Commanders Council provides a framework wherein common needs are identified and common solutions are sought, technical standards are established and disseminated, joint procurement opportunities are explored, technical and equipment exchanges are facilitated, and advanced concepts and technical innovations are assessed and their potential applications identified.

As an associate member, NASA maintains active participation in the Range Commanders Council and many of its working groups, including the Range Safety Group.

Member Ranges

Members include Army, Navy, Air Force, and DOE ranges. Their locations are shown in the graphic below and identified in the following table.



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Locations of Member Ranges

Army	Air Force	Navy	Department of Energy
Aberdeen Test Center, Aberdeen Proving Ground, Aberdeen, MD	30 th Space Wing, Vandenberg Air Force Base, CA	NAVAIR Atlantic Ranges, Patuxent River, MD	Department of Energy Nevada Test Site
Dugway Proving Ground, Dugway, UT	45 th Space Wing, Patrick Air Force Base, FL	NAVAIR Pacific Ranges, China Lake and Point Mugu, CA	
Electronic Proving Ground, Ft Huachuca, AZ	Air Armament Center, Eglin Air Force Base, FL	Naval Undersea Warfare Center Division Keyport, Keyport, WA	
National Training Center, Fort Irwin, CA	Air Force Flight Test Center, Edwards Air Force Base, CA	Naval Undersea Warfare Center Division Newport, Newport, RI	
Reagan Test Site, APO AP	Arnold Engineering Development Center, Tullahoma, TN	Pacific Missile Range Facility, Kekaha, HI	
White Sands Missile Range, White Sands, NM	Goldwater Range, Luke Air Force Base, AZ		
Yuma Proving Ground, Yuma, AZ			

Range Safety Group

Through standardization, development, and continuous improvement, the Range Safety Group of the Range Commanders Council supports the safe conduct of hazardous operations on the test, training, and operational ranges and related facilities. Hazardous operations include, but are not limited to, ordnance and expendable releases, directed energy and laser operations, missile flight, space launch and reentry, unmanned vehicle operation, gunfire, explosive use, and hazardous emissions.

100th Meeting of the Range Commanders Council Range Safety Group

The 100th meeting of the Range Safety Group was hosted by the 45th Space Wing Safety Office at Patrick Air Force Base. The meeting was held in Indialantic, Florida from June 5 through June 7. This conference included a number of special topics briefings, including:

- Demo-2 test flight of the autonomous flight safety system
- Unmanned aerospace vehicle and systems range safety requirements document development
- Directed energy test and evaluation capability
- Range reports from all participating Major Range Test Facility Bases

NASA provided range safety related training status reports and range reports for Kennedy Space Center, Wallops Flight Facility, and Dryden Flight Research Center. The Flight

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Termination Systems Committee and Risk Committee also met. NASA participated in the meetings of both these committees.

Flight Termination Systems Committee Meeting

The Flight Termination Systems Committee met at Patrick Air Force Base to discuss ongoing issues relevant to flight termination systems. The main topic of discussion was the enhanced flight termination system. Major milestones accomplished by the program as well as future applications and implementation of the enhanced flight termination system were discussed. Members of the enhanced flight termination system program presented the status and future of the program to the committee. Other topics discussed were the release of RCC 319, *Flight Termination Systems Commonality Standard*, autonomous flight termination system/autonomous flight safety system, frequency interference at various ranges, and National Security Agency decertification of the High Alphabet system.

Risk Committee Meeting

During the Range Safety Group meeting, the Risk Committee selected a new chairperson, Mr. Paul Rosati from the 45th Space Wing. The primary focus of the Risk Committee was the determination of task proposals to the Range Commanders Council for 2008. All task proposals were briefed, and it was decided to submit the following task proposals to create or expand on risk criteria in RCC 321-07, *Common Risk Criteria Standards for National Test Ranges*:

- Risk Committee Secretariat Position
- State of the art review of risk uncertainty and catastrophe aversion and development of approaches to launch risk uncertainty for application to risk acceptability
- Treatment of conditional risk criteria for foreseeable conditions
- Asset protection
- Responsibility for satellite protection beyond orbital insertion and space craft protection for exo-atmospheric and orbital debris hazards
- Business jet vulnerability criteria
- Mitigation of large numbers of minor injuries
- Reusable launch vehicle and other controlled reentry related issues
- Hazard threshold for land vehicles
- Toxic concentration levels for toxic hazard corridors
- Voluntary public risk

101st Meeting of the Range Commanders Council Range Safety Group

Sandia National Laboratories in Albuquerque, New Mexico hosted the 101st meeting of the Range Commanders Council Range Safety Group, held November 27 through 29. This conference included a special topic briefing on Sandia National Laboratories and range reports from all participating Major Range Test Facility Bases, as well as a session for the Flight Termination Systems Committee. The Risk Committee did not meet during this session.

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NASA provided range safety related training status reports and range reports to the group for Kennedy Space Center, Wallops Flight Facility, and Dryden Flight Research Center and participated on the Flight Termination Systems Committee during this session.

The Flight Termination Systems Committee discussed ongoing issues relevant to flight termination systems. The main topic of discussion was the enhanced flight termination system. An overview of the system, as well as improvements and enhancements by the program were discussed. Additionally, future applications and implementation of the system were briefed.

Other briefings included the following:

- Directed energy and flight termination system requirements
- Herley Industries flight termination receiver 60-1 issues and requalification processes
- Emerging unmanned aerial vehicle programs and RCC-319
- Enhanced flight termination system documentation and concept of operations
- Enhanced flight termination system database discussion focusing on range identifications and other command fields

The discussion about range identifications brought to light the possibility of using the Flight Termination Systems Committee as the clearinghouse for issuing enhanced flight termination system range identifications and perhaps vehicle identifications. It was determined that more discussion was necessary before the committee would undertake this task.